UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,366	05/30/2001	Sudheer Sirivara	10559-477001/ P11156	7426

			EXAMINER
20985	7590	11/08/2005	PHAN, TRI H

FISH & RICHARDSON, PC
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2005*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-9,13-17, and 20-21* is/are rejected.

7)☐ Claim(s) *5,6,10-12,18 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment/Arguments

1.   This Office Action is in response to the Response/Amendment filed on July 15th, 2005.

Claims 1-21 are now pending in the application.

Claim Objections

2.   Claims 13 and 17 are objected to because of the following informalities:

In claim 13, line 3, the word "the" in front of the term "Snaroff JND algorithm" should

be correct to -- a --.

In claim 13, line 3, the word "the" in front of the term "ANSI T1.801.03 algorithm"

should be correct to -- an --.

In claim 17, line 2, the word "a" in front of the term "quality of service" should be correct

to -- the --.

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 1-4, 7-9, 13-17, and 20-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Janko et al.** (U.S.2002/0150102; hereinafter refer as '**Janko**') in view of **Zhu**

et al. ("Coding and Cell-Loss Recovery in DCT-Based Packet Video", IEEE Transactions on

Volume 3, Issue 3, June 1993; page(s):248-258; hereinafter refer as '**Zhu**').

- Regarding claims 1, 9, and 14, Janko discloses a *method* (wherein the "*computer*

program" with "*instructions*", as claimed in claimed invention 14, is inherent in the system, in

order to perform the provided methods such as compressing, transmitting, comparing, ... as

described) *and a system* ('streaming media quality analyzer system'; see Abstract; figures 1-3)

comprising a first feature extractor ('server 16') *for generating reference data characterizing a*

media stream (figures 1-2; wherein the server 16 receives the compressed streaming media

signal, e.g. "*reference data*", through the encoder 14 as disclosed in page 1, para [0009]), *a*

second feature extractor ('receiver 20') *for generating altered data characterizing said media*

stream after said media stream has traversed a channel (figures 1-2; wherein the receiver 20

receives the compressed streaming media signal, e.g. "*altered data*", as disclosed in page 1, para

[0009]) *that includes a network* ('Internet network'); *and an analyzer* ('media quality analyzer

28') *for comparing said reference data and said altered data to generate a transmission metric*

indicative of a quality of service ('impaired media') as disclosed in page 2, para [0010]; *and*

determining a quality of service of said channel on the basis of a comparison of said reference

data and said altered data (see page 1, para [0004] wherein the streaming media quality analyzer

system compares the original packetized streaming media with the reconstructed packetized

streaming media to determine the quality of the streaming media signal). Janko does disclose

about encoding the compressed streaming media signal for video/audio data with the

compression scheme, such as MPEG2, MPEG4 or the like for video ("*image*"; see page 1, para

[0009]) through the use of encoder, but fails to explicitly disclosed about the "*mathematical*

transform" of the portion of an image included in said media stream. However, such

implementation is known in the art.

For example, Zhu discloses about the coding and reconstruction DCT-based image and

video-coding method through the use of discrete cosine transform 'DCT' for image and video

compression in the media stream ("*mathematical transform*" of the portion of an image; for

example see Abstract; section 'C. Coding'; pages 250-251).

Thus it would have been obvious to the person of ordinary skill in the art at the time of

the invention was made to implement the use of discrete cosine transform 'DCT' for coding

image and video compression in the media stream as taught by Zhu in Janko's encoding with the

motivation being to optimize and improve the ability to transfer image and video compression

with effected ways, such as compression gain, system complexity, processing delay as disclosed

in Zhu: Abstract.

- In regard to claims 2 and 15, in addition to features in base claims 1 and 14 (see

rationales pertaining the rejection of base claims 1 and 14 discussed above), Janko further

discloses wherein said reference data characterizes a feature of said media stream (for example

see page 2, para [10] wherein the feature of the reference data is defective streaming media based

on the coding) and said altered data characterizes a feature of said media stream after said media

stream has traversed said channel (for example see page 2, para [10] wherein the feature of the

altered data is packets loss, interarrival jitter, ... based on transmission packets over Internet

network).

- Regarding claims 3, 13, and 16, in addition to features in base claims 1, 9 and 14 (see

rationales pertaining the rejection of base claims 1, 9 and 14 discussed above), the combination

of Janko and Zhu does disclose about the adaptive scheme for imposing smoothing constraints

between adjacent (partial or temporally); but fails to explicitly disclose about *"applying a Sarnoff*

JND algorithm or an ANSI T1.801.03 algorithm" in obtaining reference and altered data.

However, *"Sarnoff JND algorithm or ANSI T1.801.03 algorithm"* are well known in the art for

extracting temporal or spatial features of the encoded media.

Thus it would have been obvious to the person of ordinary skill in the art at the time of

the invention was made to implement the *Sarnoff JND algorithm or ANSI T1.801.03 algorithm*

into the Janko's adaptive scheme as system design choices, with the motivation being to provide

for spatial and temporal smoothing constraints between adjacent of the encoded media.

- In regard to claims 4 and 17, in addition to features in base claims 1 and 14 (see

rationales pertaining the rejection of base claims 1 and 14 discussed above), Janko further

discloses *wherein determining a quality of service of said channel comprises comparing said*

first reference data and said altered data (page 1, para [0004]).

- Regarding claims 7 and 20, in addition to features in base claims 1 and 14 (see rationales pertaining the rejection of base claims 1 and 14 discussed above), Janko further discloses about *the encoder* ('encoder 14' in figures 1-2) *for creating an encoded representation of said media stream* ('compressed media'; see page 1, para [0009]); *a decoder* ('decoder 22, 36' in figs.1-2) *for recovering said media stream from said encoded representation* (page 1, para [0009]; page 2, para [0010]); *and a computer network* ('network 18' or Internet in figs. 1-3) *between said encoder and said decoder for transmitting said encoded representation between said encoder and said decoder* (page 1; para [0009]).

- In regard to claims 8 and 21, in addition to features in base claims 1 and 14 (see rationales pertaining the rejection of base claims 1 and 14 discussed above), Janko further discloses wherein obtaining said reference data comprises passing said media stream through an encoder ('encoder 14' in figs. 1-2) to generate an encoded signal ('compressed media'; page 1, para [0009]); passing said encoded signal through a decoder ('decoder 22 or 36 in figs. 1-2) to generate a decoded media stream ('decoded media'; page 1, para [0009]); and passing said decoded media stream through a feature extractor ('media quality analyzer 28' in figs. 1-2) to extract said reference data (page 2, paras [0010]-[0011]).

Response to Amendment/Arguments

5.   Applicant's arguments filed on July 15th, 2005 with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

6.   Claims 5-6, 10-12, and 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Many references in the art disclose the system and method for controlling real-time multimedia streaming. Most of those references are comprising encoder, decoder, data network such as Internet, such as that found in Janko et al. [U.S. 2002/0150102], Zhu et al. [U.S. 6,085,252], Cooklev, Todor [U.S. 6,574,218]. But none of the references of record-alone or in combination disclose or suggest the combination of limitations specified in the independent claims that utilizes the correlator for configuring to correlate network statistics associated with transmission metric as disclosed in the claimed invention.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zhu et al. (U.S.6,085,252), **Cooklev, Todor** (U.S.6,574,218) and **Yon Jun Chung et al.** ("Real-time streaming video with adaptive bandwidth control and DCT-based error concealment", Circuits and Systems II: Analog and Digital Signal Processing, IEEE Transactions on Volume 46, Issue 7, July 1999, Page(s):951-956) are all cited to show devices and methods

for improving the real-time multimedia streaming communication architectures, which are

considered pertinent to the claimed invention.

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The

examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BRIAN NGUYEN
PRIMARY EXAMINER

Tri H. Phan
November 3, 2005